



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

| | | | | |
|--|-------------|----------------------|----------------------|------------------|
| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/535,163 | 05/16/2005 | Gerhard Kressner | 02894-712US1 / 06722 | 2366 |
| 26161 7590 11/03/2008 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022 | | | | |
| EXAMINER | | | | |
| GUIDOTTI, LAURA COLE | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3727 | | | | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
| 11/03/2008 | | ELECTRONIC | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary

Application No.

10/535,163

Applicant(s)

KRESSNER, GERHARD

Examiner

Laura C. Guidotti

Art Unit

3727

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-26 and 28-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-26 and 28-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 37 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner is confused as to what is being claimed in claim 37. In Applicant's Figure 3, the drive coupling is at 21 while a driver pin is at 50. The language of claim 37 is unclear and the Examiner does not understand what "the coupled driver coupler" is, or how it acts "with respect to the driver pin, to compensate for angulation between the eccentric driver and a corresponding bristle support."

Claim 43 recites the limitation "the drive couplers" in Line 1. There is insufficient antecedent basis for this limitation in the claim. There may only be a single drive coupler in claims 42 and 24 from which claim 43 depends.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 24-26, 28-33, 37-40, 42-43, 45, and 49-50 are rejected under 35 U.S.C. 102(a) and 102(e) as being anticipated by Kuo, US 6,434,773.

Kuo discloses the claimed invention including a toothbrush head comprising a brush head carrier (10) that is releasably connectable to a hand piece of an electric

toothbrush (at connection of 4 and 6 which is capable of being "releasably connectable" if broken, cut, and then reattached), the brush carrier comprising a translator element rotatable about a longitudinal rotation axis within the brush head carrier (216), a plurality of bristle supports (unlabeled, disc-shape support upon which bristles 8 and 9 are mounted as shown in Figure 2g) that carry a respective bristle set (8, 9) and are movably mounted on the brush head carrier (see Figures 2h, 2i; Column 7 Lines 15-43), and a plurality of drive couplers (the drive couplers are the protrusions forming notch 290 on each of the supports carrying bristles 8, 9 as shown in Figures 2g-2i), each drive coupler being coupled to a respective bristle support (Figures 2g-2i) and eccentrically coupled to the translator element an eccentric driver (226), such that each of the bristle supports is oscillated in response to rotation of the translator element (Figures 2g-2i, Column 7 Lines 15-43), at least one of the bristle supports coupled so as to rotate in oscillation about an axis of rotation extending transverse to the longitudinal rotation axis of the translator element (Figures 2c-2j)(claims 24, 50). Regarding claim 25, there is a driver pin coupling the eccentric driver to one of the bristle supports (234). Regarding claim 26, the driver pin moves in an orbit that includes at least a partial cylinder segment relative to the rotation axis of the translator element (as translator 216 rotates, pin 234 rotates in a cylindrical orbit, see Figure 2f). Regarding claim 28, the brush head carrier is non-rotatably coupled to the hand piece (see Figures, molded, Column 9 Lines 54-56). Regarding claim 29, each of the bristle supports has its own axis of motion transverse to the longitudinal axis (see Figures 2h, 2i, the bristle supports rotate about an axis central to 8 and 9). Regarding claim 30, each of the bristle

supports are capable of being considered a main bristle support and are rotatable about an axis of rotation essentially perpendicular to the longitudinal rotation axis of the translator element (see Figures 2h, 2i, the bristle supports rotate about an axis central to 8 and 9). Regarding claim 31, the "main" bristle support is disposed at a distal end of the brush head carrier (when main bristle support is 8, see Figures). Regarding claim 32, the bristle supports further include an auxiliary bristle support (either 8 or 9 could be considered an "auxiliary" bristle support) pivoted about a pivot axis essentially perpendicular to the longitudinal rotation axis of the translator element (see Figures 2h, 2i, the bristle supports rotate about an axis central to 8 and 9). Regarding claim 33, the pivot axis of the auxiliary bristle support is approximately parallel to a plane defined by the auxiliary bristle support (when the plane defined by the auxiliary bristle support is vertically extended.) Regarding claim 37, a drive coupler to which the driver pin is coupled is coupled with the driver pin at a coupling that allows for relative pivoting of the coupled driver coupler with respect to the driver pin, to compensate for angulation between the eccentric driver and a corresponding bristle support (see Figures). Regarding claim 38, at least one of the drive couplers is coupled to the eccentric driver with a translational degree of freedom (as 234 drives translationally within notch 290), allowing translational motion in a direction transverse to the longitudinal rotation axis of the translator element. Regarding claim 39, the eccentric driver is guided within a longitudinally slotted clearance space defined within at least one of the drive couplers (290). Regarding claim 40, one of the bristle supports defines a sliding surface that extends transverse to a longitudinal axis of the toothbrush head and on which the

eccentric driver is adapted to slide (the sliding surface being the surfaces 290).

Regarding claim 42, at least one of the drive couplers is constructed such that forces and movements are transmitted exclusively in a direction transverse to a longitudinal direction of the toothbrush head (see Figures 2g-2i). Regarding claim 43, the drive couplers are free to move in a plane containing a longitudinal direction of the toothbrush head (in that when 8 and 9 move, they contain a longitudinal direction) and being force-transmitting in a plane perpendicular thereto (Figures 2g-2i). Regarding claim 45, at least one of the drive couplers is integral with its respective bristle support and in positive engagement with the driver (the drive coupler are integral to the bristle supports and include the areas having 290). Regarding claim 49, the toothbrush comprises a hand piece equipped with an electric drive (12) and a toothbrush head is releasably secured to the hand piece (at 6).

3. Claims 24, 28-36, and 38-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Blaustein et al., US 6,725,490.

Blaustein et al. disclose the claimed invention including a toothbrush head comprising a brush head carrier (816) that is releasably connectable to a hand piece (817) of an electric toothbrush (via unlabeled adapter piece shown in Figure 8 that is equivalent to 17 in Figure 1, Column 3 Lines 27-30), the brush carrier comprising a translator element rotatable about a longitudinal rotation axis within the brush head carrier (918, 1118, 1218, 1318, 1518 or 1618), a plurality of bristle supports (910, 1110, 1210, 1310, 1508, or 1608; 814) that carry a respective bristle set (unlabeled, see Figures) and are movably mounted on the brush head carrier (see Figures), and a

plurality of drive couplers (914, 922, 1116, 1426, 1324, 1520, 1522, or 1622, and the unlabeled recess (equivalent with 22 in Figure 3) within 814 that receives the eccentric or offset ends of translator element), each drive coupler being coupled to a respective bristle support (see Figures) and eccentrically coupled to the translator element an eccentric driver (1514, 1614), such that each of the bristle supports is oscillated in response to rotation of the translator element (see Figures 15-16, Column 5 Line 5 to Column 10 Line 17), at least one of the bristle supports coupled so as to rotate in oscillation about an axis of rotation extending transverse to the longitudinal rotation axis of the translator element (814)(claims 24, 50). Regarding claim 28, the brush head carrier is non-rotatably coupled to the hand-piece (adapter piece in Figure 8 that is equivalent to 17 in Figure 1 is a non-rotatable coupling). Regarding claim 29, each of the bristle supports has its own axis of motion transverse to the longitudinal axis (see Figures 15-16). Regarding claim 30, each of the bristle supports are capable of being considered a main bristle support and are rotatable about an axis of rotation essentially perpendicular to the longitudinal rotation axis of the translator element (see Figures 15-16, the bristle supports rotate about an axis vertically through the center of 814 and about the axis 1510 or 1610). Regarding claim 31, the "main" bristle support is disposed at a distal end of the brush head carrier (when main bristle support is 814, see Figures). Regarding claim 32, the bristle supports further include an auxiliary bristle support (1508 or 1608 could be considered an "auxiliary" bristle support) pivoted about a pivot axis essentially perpendicular to the longitudinal rotation axis of the translator element (see Figures 15-16). Regarding claim 33, the pivot axis of the auxiliary bristle

support is approximately parallel to a plane defined by the auxiliary bristle support (Figures 15-16). Regarding claim 34, the bristle supports include an auxiliary bristle support mounted for translational displacement along a motion axis transverse to the longitudinal rotation axis of the translator element (such as in the embodiment of Figures 9-9A where 910 is the auxiliary bristle support, or the embodiment of Figure 11 where 1110 is the auxiliary bristle support, or the embodiment of Figures 13-14 where 1310 is the auxiliary bristle support). Regarding claim 35, the motion axis is arranged approximately parallel to a main bristle direction of the bristles of the auxiliary support (Figure 11). Regarding claim 36, the motion axis is arranged transverse to a longitudinal axis of the toothbrush head and approximately parallel to a plane defined by the auxiliary support (Figures 9-9A). Regarding claim 38, at least one of the drive couplers (drive coupler 914) is coupled to the eccentric driver with a translational degree of freedom (as 914 drives translationally against 922), allowing translational motion in a direction transverse to the longitudinal rotation axis of the translator element (Figures 9-9A). Regarding claim 39, the eccentric driver is guided within a longitudinally slotted clearance space defined within at least one of the drive couplers (see Figure 9, see unlabeled clearance space). Regarding claim 40, one of the bristle supports defines a sliding surface that extends transverse to a longitudinal axis of the toothbrush head and on which the eccentric driver is adapted to slide (928). Regarding claims 41, 46, and 52, there is a spring biasing device biasing the sliding surface against the eccentric driver (934). Regarding claim 42, at least one of the drive couplers is constructed such that forces and movements are transmitted exclusively in a direction transverse to a

longitudinal direction of the toothbrush head (the coupler of support element 814). Regarding claim 43, the drive couplers are free to move in a plane containing a longitudinal direction of the toothbrush head (in that when 814 moves it has a longitudinal direction) and being force-transmitting in a plane perpendicular thereto (Figures). Regarding claims 44 and 51, at least one of the drive couplers is constructed such that forces and movements are transmitted in a direction transverse to a longitudinal direction of the toothbrush head (the coupler of support 814) and forces are transmitted in the longitudinal direction of the head (as in the couplers of Figures 12-14), wherein the driver is mounted on the translator element for displacement in the longitudinal direction (Figures 12-14). Regarding claim 45, at least one of the drive couplers is integral with its respective bristle support and in positive engagement with the driver (the drive couplers are integral to the bristle supports in all embodiments discussed above). Regarding claim 47, the translator element comprises a disengageable rotary coupling adapted to engage a drive element of a toothbrush hand piece (the equivalent of 17 shown in Figure 8). Regarding claim 49, the toothbrush comprises a hand piece equipped with an electric drive (819) and a toothbrush head is releasably secured to the hand piece (via the equivalent of 17 shown in Figure 8).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo, US 6,434,773 as applied to claim 24 in view of Driesen, US 5,652,990.

Kuo discloses all elements previously mentioned above, however does not disclose that the bristle tufts are of varying orientations, cross sections, lengths, or tilted at varying angles.

Driesen teaches a disc-shaped bristle support (38) that carries bristle tufts having varying lengths and cross-sections (see Figures 2, 5) so that bristles more central to a rotation axis of the support are shorter than those near the outer perimeter of the support so that the longer bristles can clean interproximal spaces and can remove plaque in a tooth-gingiva region, and so that the inner bristles will have a smaller diameter than those at the outer perimeter so that they are more rigid and suitable for cleaning interproximal spaces (Column 1 Line 60 to Column 2 Line 9).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the bristle tufts of Kuo to have varying cross sections and varying lengths, as Driesen teaches, so that bristle tufts at an outer periphery of the support will be longest and have a smaller diameter than those situated near a center of the support so that those bristle tufts at the outer periphery will be able to advantageously clean interproximal areas.

5. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blaustein et al., US 6,725,490 as applied to claim 24 in view of Driesen, US 5,652,990.

Blaustein et al. disclose all elements previously mentioned above, however does not disclose that the bristle tufts are of varying orientations, cross sections, lengths, or tilted at varying angles.

Driesen teaches a disc-shaped bristle support (38) that carries bristle tufts having varying lengths and cross-sections (see Figures 2, 5) so that bristles more central to a rotation axis of the support are shorter than those near the outer perimeter of the support so that the longer bristles can clean interproximal spaces and can remove plaque in a tooth-gingiva region, and so that the inner bristles will have a smaller diameter than those at the outer perimeter so that they are more rigid and suitable for cleaning interproximal spaces (Column 1 Line 60 to Column 2 Line 9).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the bristle tufts of Blaustein et al. to have varying cross sections and varying lengths, as Driesen teaches, so that bristle tufts at an outer periphery of the support will be longest and have a smaller diameter than those situated near a center of the support so that those bristle tufts at the outer periphery will be able to advantageously clean interproximal areas.

Response to Arguments

6. Applicant's arguments filed 14 July 2008 have been fully considered but they are not persuasive.

With regards to Kuo, the Applicant argues that the brush head carrier is not releasably connected to the handle of the toothbrush. The Examiner respectfully disagrees. First, it is noted that the claims are drawn to a toothbrush head and the hand piece (or handle) is not positively recited or required by the claims. Second, the head carrier is "releasably connected" in that a user is capable of cutting or breaking the head carrier and hand piece. Thus the connection is "releasable". It is also noted that claim

50 does not require that the hand piece and head carrier be "releasably connected", only that the carrier is "connectible". The carrier of Kuo is connectible to the hand piece.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C. Guidotti whose telephone number is (571) 272-1272. The examiner can normally be reached on Monday-Thursday, 7:30am - 5pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura C Guidotti/
Primary Examiner, Art Unit 3727